

REMARKS

Claims 18-30 are pending in this application. Claims 18-19 and Claims 24-26 have been amended, and Claims 20-23 and Claims 27-30 remain in this application, unamended. The Applicants respectfully request reconsideration and review of the application as amended above in light of the following remarks.

The Examiner rejected Claims 18-30 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-8 of U.S. Patent No. 6,327,812. The Examiner stated that a terminal disclaimer in compliance with 37 C.F.R. § 1.321(c) may be used to overcome an actual or provisional rejection based on non-statutory double patenting. The Applicants submit herewith a terminal disclaimer in compliance with 37 C.F.R. § 1.321(c), and therefore submit that the obvious-type double patenting rejection is traversed.

Before addressing the merits of the rejections based on prior art, the Applicants provide the following general description of the invention. The present invention is directed to a method of sanitizing an enclosed space. According to an embodiment of the invention, the method begins by preparing an enclosed space for exposure to a high temperature gas by removing or protecting all heat sensitive items. At least one ingress duct is introduced into the interior of the enclosed space. An environmentally acceptable gas, such as air or nitrogen, is heated to a temperature lethal to the undesirable organisms. The heated gas is directed into the enclosed space through the ingress duct for a time sufficient to raise the temperature of the enclosed space to the lethal temperature. The organisms are terminated by the gas maintained at the lethal temperature.

In one embodiment of the invention, the dead organisms are extracted from the enclosure by an extraction unit. Thus, not only are the undesirable organisms killed within the enclosed space, the residue of the destroyed organisms are removed from the enclosed space as well, thereby eliminating a source of allergen that can cause additional health problems to occupants of the space.

The Examiner rejected Claims 18-30 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 4,817,329 by Forbes (hereinafter "Forbes"). This rejection is respectfully traversed.

Forbes is directed to a method of exterminating insects using heat. More particularly, Forbes discloses a method of treating a region infested by insects by subjecting the region to hot gases for a period of time sufficient to raise the host material temperature to a desired level, and maintaining it at that temperature for a suitable period of time. While Forbes describes the method as applicable to exterminating all kinds of insects, the reference specifically discusses extermination of drywood termites (*Incisstermes Minor*) that may be present in the interior of a wooden post. The reference describes a "thermal gradient" that relates to the amount of time necessary for the applied heat to penetrate entirely through a wooden post so as to reach the termites embedded therein. Specifically, the reference identifies "practical ranges and times" for allowing the heat to fully penetrate the wooden post. See col. 4, lns. 51-63.

Unlike the present invention, Forbes does not disclose establishing a positive pressure within the enclosed structure for the purpose of removing the destroyed organisms in the process of venting the heated gas. The Examiner states that "Forbes establishes a slight positive pressure since a fan 27 blows in the heated gas," and that "Forbes has moving gas to remove remains of organisms from the enclosure." The Applicant, however, respectfully submits that the Examiner is mistaken. Forbes only discloses a fan in the enclosure for the purpose of circulating heated air to reach the desired temperature within the region and to prevent stratification. Forbes, Col. 1, ln. 65 – Col. 2, ln. 2. The fans of Forbes are not used to remove dead organisms from the region. Forbes only discloses the use of an outlet hose and an aperture to allow hot air to leave the region to allow for air recirculation within the region. Forbes, Col. 1, lns. 47-60. The Forbes reference nowhere discloses the removal of dead organisms, through the use of a positive pressure or otherwise.

In one embodiment of the invention, substantially all of the remains of the killed organisms are removed. To more clearly show this, the Applicants have amended independent Claims 18 and 24 to identify extracting the heated gas and the dead organisms from the enclosure, and an extraction unit for removing the dead organisms, respectively. Dependent Claims 19 and 25 have also been amended to show that an egress duct may be in communication with the extraction unit. Forbes fails to suggest or disclose the step of "extracting said heated gas and dead organisms from said enclosure," and fails to disclose "an extraction unit" as defined in independent Claims 18 and 24. In light of the remarks and the claim amendments, the Applicants submit that independent Claims 18 and 24, and all claims that depend therefrom, are patentable over Forbes.

In another embodiment of the invention, a plurality of temperature indicating probes are disposed within the enclosed space at various locations, such as onto the surface of a wall, floor or other space, or inserted through a structure into an interior space, e.g., within a wall cavity or crawl space. In yet another embodiment, the temperature within the enclosed space is monitored from the probes while the heated gas is introduced into the enclosed space, to thereby provide accurate information regarding the temperature throughout the enclosed space and ensure that the entire enclosed space is brought to the lethal temperature.

In contrast to the embodiments of the invention, Forbes fails to disclose monitoring the temperature within the enclosed space in real time. The section of Forbes (Col. 4, Ins. 51-64) cited by the Examiner fails to even allude that any sort of real time measurement of the temperature within the region is measured, but rather, the reference suggests that an estimation of the temperature within the region is sufficient. The estimation of the temperature within the region is made by controlling the temperature of the source gas and the duration of time that the heated source gas is exposed to the region. The temperature of the source gas and the duration of time that the source gas is exposed to the region is determined by an examination of known

thermal gradients within wooden structures. In particular, Forbes states that:

Experiments with drywood termites *Inscistermes Minor* have shown that there are no survivors from even a brief exposure to 120 degrees F. temperature. . . . Thus, 120 degrees is a sufficiently elevated temperature for a short exposure **by this particular insect**. . . . The temperatures may and do vary somewhat **for various insects**, and must be determined for individual species. **However, the effective temperatures are surprisingly close [for the various insects].**

An example of practical ranges and times, a 4 X 4 wooden post at about 75 degrees F., exposed to convecting air at 160 degrees F. will heat the post to about 120 degrees F. at its innermost point in about an hour. . . . Thus, it would be possible to terminate the heating when the interior of the post is perhaps only 115 degrees F., and then to rely on the ensuing raise in temperature for the kill. **Usually that will not be done, because the certainty of kill is worth a little more time and fuel.**

Forbes, at Col. 4, Ins. 36-64 (**emphasis added**) (brackets added by Applicant).

Because the focus of Forbes is to exterminate insects, termites in particular, within a specific region, Forbes can rely on known lethal temperature ranges for termites and on known thermal gradients for areas in which termites reside, wood. The Forbes language quoted above merely reproduced these known temperature and time ranges, it does not in any way even suggest that the lethal temperatures be monitored in real time, by way of a thermometer or otherwise. Indeed, **Forbes teaches away from the use of temperature probes** that the present invention claims by stating that "the certainty of kill, is worth a little more time and fuel." The use of temperature probes is not obvious.

Acknowledging that the reference fails to disclose a "plurality of probes," the Examiner further states that "it would have been obvious to employ more than one probe to monitor the temperature for multiplied effect." The Applicants disagree. Since Forbes focuses on killing a single type of organism, i.e., drywood termites, the "practical

ranges and times" are sufficient to ensure efficacy. In contrast, the present application is directed to a much broader range of organisms with each having potentially unique temperature/time requirements to achieve complete extermination. Multiple temperature probing within an enclosed structure ensures satisfaction of such requirements. Additionally, many types of organisms such as mold may exist within enclosed spaces inside a structure, such as within a wall space, and probing is therefore necessary to ensure that such spaces are brought to the lethal temperature. In fact, the application specifically states that one purpose of the claimed invention is to kill various organisms and indicates why Forbes is not effective for this purpose: "However, this [Forbes] method, using the described temperatures, is not effective for other organisms, such as fungi, and toxic molds" Application, p. 2, Ins. 7-20. The application achieves the extermination of these other organisms by placing temperature probes about the enclosed structure to ensure that there is a uniform lethal temperature that will exterminate the organisms. Application, p. 2, Ins. 9-23.

In sum, Forbes fails to suggest or disclose the steps of: "disposing a plurality of temperature indicating probes at predetermined locations within said enclosed structure; monitoring the temperature detected from said probes . . . ,", or "monitoring the temperature in real time to ensure that all portions of said structure reach said predetermined temperature" as defined in independent Claim 20 and 26, respectively. In light of the remarks made above, the Applicants assert that independent claims 20 and 26, and all claims depending therefrom, are allowable over the art of record.

In view of the foregoing, the Applicants respectfully submit that Claims 18-30 are in condition for allowance. Reconsideration and withdrawal of the rejections is respectfully requested, and a timely Notice of Allowability is solicited. To the extent it would be helpful to placing this application in condition for allowance, the Applicants encourage the Examiner to contact the undersigned counsel for the purpose of conducting a telephonic interview.

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Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

To the extent necessary, Applicants petition the Commissioner for a three-month extension of time, extending to December 23, 2002 (the first business day following December 21, 2002), the period for response to the Office Action dated June 21, 2002. The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0639.

Respectfully submitted,



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Enclosure: Terminal Disclaimer

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

*Forbes
iv
Montellano* 18. (Once Amended) A method for killing organisms and removing of toxic substances from an enclosure, which comprises the steps of:

preparing an enclosure having an interior and an exterior for exposure to a high temperature gas by removing or protecting all heat sensitive items;

[positioning a plurality of temperature indicating probes at predetermined locations in said enclosure;]

providing at least one ingress duct communicating with said interior of said enclosure;

heating an environmentally acceptable gas to a temperature lethal to predetermined organisms;

directing said heated gas into said enclosure through said at least one ingress duct for a time sufficient to raise the temperature of said enclosure to said lethal temperature;

[monitoring the temperature from said probes;

recording said temperatures from said probes in real time;

establishing at least a slight positive pressure within said enclosure;] and

[venting] extracting said heated gas and dead organisms from said enclosure.

19. (Once Amended) The method according to Claim 18 further including the step of including at least one egress duct, communicating between said interior and said exterior of said enclosure, wherein said heated gas is extracted through said at least one egress duct.

Forbes
iv
Montellano
24. (Once Amended) A system for sanitizing an enclosed structure having an exterior and an interior, comprising:

a source of an environmentally acceptable gas;

a heater coupled to said gas source to heat said gas to a predetermined temperature, and means for introducing a flow of said heated gas into said interior of said enclosed structure; and,

[a plurality of temperature indicating probes adapted to be disposed at predetermined locations within said enclosed structure; and

a control unit electrically connected to said plurality of temperature indicating probes to thereby provide an indication of temperature at said predetermined locations within said enclosed structure;]

an extraction unit in communication with said enclosed structure;

wherein, said heated gas serves to kill organisms and the extraction unit removes toxic substances from within said enclosed structure.

25. (Once Amended) The system of Claim 24, wherein said introducing means further comprises at least one duct extending between said exterior and said interior of said enclosed structure, wherein said extraction unit is in communication with the enclosed structure by way of an egress duct.

26. (Once Amended) A method for exterminating toxic organisms in a structure, said toxic organisms consisting of at least one of fungi; toxic molds, and bacteria, said method comprising the steps of:

heating a gas to a predetermined temperature;

directing said heated gas into said structure in order to raise the temperature within said enclosed structure to said predetermined temperature;

monitoring the temperature in real time to ensure that all portions of said structure reach said predetermined temperature;

maintaining said temperature for a predetermined period of time; and
venting said heated gas from said enclosed structure.